

IN THE CLAIMS:

- 1 1. (Original): A method for inspecting a semiconductor wafer comprising:
 - 2 receiving defect information representative of plurality of defects on a
 - 3 semiconductor wafer;
 - 4 taking a statistically-based sampling of said plurality of defects to produce a
 - 5 plurality of N sampled defects, N being a sample number; and
 - 6 performing an inspection of each of said N sampled defects to produce summary
 - 7 information representative of results of said inspection of each of said N sampled defects.
- 1 2. (Original): The method of claim 1 further including receiving user-
2 provided information comprising one or more statistical criteria, wherein said sample number N
3 is a computed number resulting from one or more computations made based on said statistical
4 criteria.
- 1 3. (Original): The method of claim 1 further including receiving user-
2 provided information comprising one or more statistical criteria, wherein said sample number is
3 produced by a table look-up of one or more data tables.
- 1 4. (Original): The method of claim 1 further including receiving user-
2 provided information comprising one or more statistical criteria, wherein said sample number is
3 produced by a combination of one or more computations made based on said statistical criteria
4 and a table look-up of one or more data tables.
- 1 5. (Original): The method of claim 1 wherein said one or more statistical
2 criteria comprise a reliability value and an allowable error value and said step of taking a
3 statistically-based sampling includes randomly sampling N defects from said plurality of defects.

1 6. (Original): The method of claim 1 wherein said one or more statistical
2 criteria comprise a reliability value and a dominant defect percentage value and said step of
3 taking a statistically-based sampling includes randomly sampling N defects from said plurality of
4 defects.

1 7. (Original): The method of claim 1 wherein said defect information is
2 further representative of one or more clusters of said defects, said user-provided information
3 further being representative of one of said one or more clusters, said step of sampling taking a
4 statistically-based being performed on said one of said one or more clusters.

1 8. (Original): The method of claim 7 wherein said one or more clusters of
2 said defects are classified based on density of defects.

1 9. (Original): The method of claim 1 wherein said step of receiving defect
2 information includes performing a first inspection of said semiconductor wafer, said first
3 inspection identifying the presence of a defect.

1 10. (Original): The method of claim 1 wherein said summary information
2 includes first information indicative of clusters of said defects on said semiconductor wafer,
3 second information indicative of a dominant defect in each of said clusters, and third information
4 indicative of a distribution of different kinds of defects in each of said clusters, said method
5 further including presenting said first information, one or more portions of said second
6 information, and one or more portions of said third information.

1 11. (Withdrawn): A method for inspecting semiconductor wafers comprising:
2 receiving defect data representative of defects on a semiconductor wafer;
3 receiving one or more user-provided statistical criteria;
4 producing one or more sampling criteria based on said statistical criteria;
5 taking a sample of said defect data based on said sampling criteria to produce a
6 set of sampled data; and

7 inspecting each defect on said semiconductor wafer contained in said set of
8 sampled data to produce review data.

1 12. (Withdrawn): The method of claim 11 wherein said step of receiving one
2 or more user-provided statistical criteria includes presenting one or more data entry areas to a
3 user and receiving information from said user indicative of said one or more statistical criteria.

1 13. (Withdrawn): The method of claim 12 wherein said step of presenting
2 includes producing a graphical user interface on a display, said graphical user interface
3 comprising one or more graphical elements effective for prompting a user to provide said one or
4 more statistical criteria.

1 14. (Withdrawn): The method of claim 11 wherein said one or more statistical
2 criteria include a reliability value, said step of receiving one or more user-provided statistical
3 criteria including presenting a data entry area to a user and receiving data from said user
4 indicative of said reliability value.

1 15. (Withdrawn): The method of claim 11 wherein said defect data is further
2 representative of one or more clusters of said defects, said method further including receiving
3 user-provided information representative of one of said one or more clusters, said step of taking a
4 sample being performed on said one of said one or more clusters.

1 16. (Withdrawn): The method of claim 11 wherein said review data includes
2 first information representative of clusters of defects on an inspected semiconductor wafer,
3 second information indicative of a major defect mode in each of said clusters, and third
4 information representative of a distribution of each of one or more kinds of defect in each of said
5 clusters, said method further including presenting said first information and said second
6 information, and receiving user-provided information indicative of one of said clusters, and in
7 response thereto presenting a portion of said third information relating to a distribution of each
8 kind of defect in said one of said clusters.

1 17. (Withdrawn): The method of claim 16 wherein said presenting said first
2 and second information include presenting images of one or more portions of said inspected
3 semiconductor wafer.

1 18. (Withdrawn): The method of claim 16 further including producing review
2 data for a plurality of inspected semiconductor wafer, receiving user-provided information
3 representative of one of said inspected semiconductor wafers, and in response thereto presenting
4 first information of said one of said inspected semiconductor wafers.

1 19. (Withdrawn): The method of claim 16 wherein said steps of presenting
2 include producing graphical elements on a display.

20 - 33. (Canceled)